

*Stated Meeting, April 21, 1876.*

Present, 17 members.

Vice-President, Mr. FRALEY, in the Chair.

Letters of acknowledgment were received from the Institute National de France, dated March 31, (XIV iii, and asking for Vol. V i, N. S. and XIV ii), from the Radcliffe Observatory, Oxford, March 30, and from the New York State Library, April 15.

Donations for the Library were received from the Prussian Academy, *Annales des Mines*, *Nouvelles Météorologiques*, *Revue Politique*, *Nature*, *Mus. Comp. Zool. Mass.*, *American Chemist*, *Cap. Jas. C. Cole*, *Franklin Institute*, *Am. Jour. Med. Sciences*, and Mr. A. H. Worthen, of Springfield, Illinois.

Dr. Ruschenberger was, on motion, substituted for Dr. Hartshorne on the Committee to report on the publication of the medical theses presented at the last meeting, at the request of the latter.

Dr. Hartshorne read a paper on complementary spectra, rejecting the commonly received "Fatigue Theory," and offering a new explanation based upon the interference of light rays, illustrating his views by means of colored papers, and the magnesian light.

Prof. Chase communicated certain relationships which he had worked out between the velocity of light and the rotation of Mr. Crooke's new rotation apparatus, and with the phenomena of the "Selenium Eye." To these he added some fresh calculations of the weights of the planets.

Prof. Frazer read a communication which he had received from Mr. Beyton Smith, C. E. of York, Pa., giving a sketch of the literature of the belief in one magnetic pole

of declination, and of the counter belief in the existence of two such northern poles; followed by a brief statement of the results of his own field observations and calculations, leading him to the conviction of the existence of two poles, and enabling him to locate their two ellipses of rotation, approximately; not as accurately as he desires to have it done by a more skillful mathematician; but with such an approach to exactness as to be practically useful in his own tests of the age of any given land line. Both poles are located nearly on the  $70^{\circ}$  parallel of north latitude; but while the ellipse of the American pole lies nearly in a North and South direction, that of the European pole lies nearly East and West. Mr. Smith is anxious to have mathematical assistance in projecting his ellipses upon a map or globe.

Prof. Houston desired the Society to make a note of some curious observations he had made recently while using Plucker tubes for obtaining the hydrogen spectrum, and modifying the internal diameter of their capillary tubes with a view to regulate the flow of the gas. In proportion as the resistance was increased, crimson spots and lines appeared, and finally the crimson color filled the entire space.

Pending nominations Nos. 792 to 802 were read, and balloted for, No. 793 being on motion postponed on account of the absence of the nominator.

The report of the Finance Committee was presented by Mr. Fraley, and the appropriations recommended by the Committee for the ensuing year, were on motion passed.

The ballot boxes being scrutinized by the presiding officer the following named gentlemen were declared to be duly elected members of the Society:

Col. Frank M. Etting, of Philadelphia.

Dr. Daniel C. Gilman, President of the Johns Hopkins University at Baltimore.

Mr. P. Cunliffe Owen, of South Kensington, London.

Mr. I. Lowthian Bell, of Newcastle on Tyne, England.

Mr. James Geikie, of Scotland

Prof. Thos. C. Archer, of Edinburgh.

Dr. Adolph Erik Nordenskiöld, of Stockholm.

Mr. C. Juhlin Dannfelt, of Stockholm.

Mr. Elihu Thompson, A. M., Prof. Chemistry in the Philadelphia High School.

Mr. Charles V. Riley, President of the Academy of Sciences, St. Louis, Missouri.

And the meeting was adjourned.

*Stated Meeting, May 5, 1876.*

Present, 10 members.

Secretary, DR. LECONTE, in the Chair.

Visitors: Mr. Deby, of the Belgian Commission, and Mr. König, of Paris.

Letters accepting membership were received from Mr. Frank M. Etting, of Philadelphia, and Dr. D. C. Gilman, of Baltimore.

A letter declining the appointment to prepare an obituary notice of Mr. Cuyler, was received from Mr. H. M. Phillips, dated 1325 Walnut Street, Philadelphia.

On motion, Mr. Phillips was excused.

Letters of acknowledgment were received from the Regents of the New York University, and Boston Natural History Society (V ; 94).

Letters of envoy were received from the Secretary of the Geol. Survey of Pennsylvania, May 4 ; London Meteorological Office, R. S. April 8, and Royal Astronomical Society.

Donations for the Library were received from the Academies at Buda-Pest, Vienna and Bruxelles ; the Societies at Bonn, Göttingen, Ulm, Zurich, Geneva, and Cherbourg ;